

**Statement of
Cherry A. Murray**

**Nominee to be
Director of the Office of Science
Department of Energy**

**Before the Committee on Energy and Natural Resources
United States Senate**

October 20, 2015

Chairman Murkowski, Ranking Member Cantwell and Members of the Committee, thank you for the opportunity to appear before you today as you consider my nomination for the position of Director of the Office of Science at the Department of Energy (DOE). It is an honor to be here and to be nominated by President Obama and supported by Secretary Moniz.

The DOE Office of Science manages ten national laboratories, major scientific user facilities, and is the largest supporter of physical sciences in the U.S. If confirmed, I look forward to working with this Committee to maintain the Nation's leadership in basic science, which is critical to our national security, to our energy security and to our economy.

I was born in Ft. Riley, Kansas, where my father, who had previously served as a army captain in World War II, was in officer training prior to serving in the Korean War. He spent the rest of his career alternately as an intelligence officer in the Army Reserve and a diplomat. Until I was 17, I moved with my family almost yearly; we lived in Japan, Pakistan, South Korea, and Indonesia. My parents valued the arts. I took lessons in painting, dance and music, and I assisted my mother as she taught painting in the countries in which we lived. I thrived on learning new cultures and adapting to constant change. I assumed I'd also be an artist

I lived with my family in the Washington, D.C. area in between my father's international assignments. There, I spent the first two years of high school. In 9th grade, I had an inspiring chemistry teacher, Mr. Morrison, who taught a new, for the time, laboratory-based curriculum. I was enthralled by doing real experiments and by the beauty of the mathematical equations that explained the complex behavior of the chemical reactions we observed in the lab. For me, it was like creating order from chaos. I was hooked, and I decided right then to be a scientist and to keep art as a hobby.

I spent my last two years of high school in Seoul, Korea, and taught myself physics from textbooks I ordered. I then attended MIT, where I received my bachelor's degree and doctorate in physics. I worked as a staff scientist at Bell Labs Research, which was at the time one of the top places to do research in materials physics in the world. At Bell Labs,

I was surrounded by the most brilliant people doing spectacular research for a purpose: from basic science to applied engineering, inventing the future of telecommunications. There was an atmosphere of excellence, intense scientific competition and working towards a mission.

After nine fabulous years of doing basic surface physics, nano-science and studying the physics of soft matter, I was promoted into management. I led both basic physical science research and telecommunications R&D in collaboration with several business units of Lucent Technologies, then the corporate owner of Bell Labs. During my 27 years at Bell Labs, I experienced directly how breakthroughs in basic science lead to the most disruptive technologies and biggest leaps in technical breakthroughs in the market. I also learned that the transition from basic science to technology development and ultimately to new products is never easy, and is not a linear process — it is more of a spiral.

After the telecomm bubble burst, I was recruited in 2004 to Lawrence Livermore National Laboratory, as Deputy Director for Science and Technology. I was impressed with the caliber of scientists and engineers at the Lab and their devotion to national service. I learned how important science and technology are as an underpinning of our national security. I then became Principal Associate Director for Science and Technology, leading the science and engineering efforts in the national security programs and managing the science and technology strategy as well as the 3,500 scientists and engineers at the lab.

In 2009, I was recruited to Harvard University to be the Dean of the School of Engineering and Applied Sciences two years after it became Harvard's newest school in 77 years. The new school dramatically grew the number of students interested in engineering and computer science. Having interacted with spectacular undergraduate and graduate students, who eagerly want to solve problems and to make a difference in the world, I am optimistic about our Nation's continued science leadership.

I have been active in the National Academy of Sciences and the National Academy of Engineering, including serving on the National Research Council Governing Board and chairing the National Research Council Division of Engineering and Physical Sciences. I was a member of over 20 National Academy study committees, including the committee that wrote the "*Rising Above the Gathering Storm*" report. I also served on the Presidential Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, and I now serve on the Congressional Commission to Review the Effectiveness of the National Energy Laboratories.

Two years ago I joined the Secretary of Energy Advisory Board, and from that I have experienced the breadth of work done by the DOE in science, energy, environment, and national security; and the enormous challenges we have as a Nation to maintain our world-class science capabilities, to effectively manage the our energy systems, to safely and efficiently use our natural resources, to responsibly steward our environment and to provide for sustainable national and energy security.

As in all technology advances, the current technology revolution in our energy system will be catalyzed by advances in basic science. In the past, as a Nation, we could rely on the great industrial research labs to provide leading edge science relevant to technology and that could develop advances in technology; but industry is no longer doing as much basic science. We must harness the enormous potential of the DOE national laboratories working with our great research universities in collaboration with industry.

I look forward, should I be confirmed, to leading the DOE Office of Science and the national laboratories it stewards to ensure that the U.S. continues to be a leader in scientific advances and translates these advances into new technologies important for our sustainable energy security, national security and economic growth.

Thank you, and I welcome any questions you may have.